Appendix 1. Lithologic logs for test holes.

Appendix 1–1. Lithologic log for test hole 1 (Marc LeFrancois, National Park Service, written commun., April 2005)

[Legal description: 1S.8E.4.314]

Depth (meters)	Lithology	Formation
0–3.0	loose sand	Quaternary alluvial sediment
3.0–6.1	loose sand and sandstone	
6.1–21.3	yellow sandstone	San Andres Limestone
21.3–54.9	caliche[1]	
54.9–57.9	grey limestone	
57.9–62.5	yellow limestone	
62.5–89.3	grey limestone	
89.3–93.0	yellow caliche[1]	
93.0–100.6	limestone[2]	
100.6–118.9	caliche[1]	
118.9–134.7	hard blue limestone	
134.7–143.3	grey limestone	
143.3–158.5	yellow sandstone	Glorieta Sandstone
158.5–169.2	sandstone	Yeso Formation
169.2–194.5	yellow sandstone[3]	

[1]Caliche possibly refers to gypsum.

[2]Seep at 97.5 meters.

[3]Water at 190.5 meters.

Appendix 1–2. Lithologic log for test hole 2 (adapted from Titus, 1960).

[Legal description: 1S.8E.4.312]

Depth (meters)	Lithology	Formation
0–19.8	sand	Quaternary alluvial sediment
19.8–21.3	clay	
21.3–27.4	limestone, slightly sandy	San Andres Limestone
27.4–33.5	limestone, small amounts of siltstone	
33.5–35.7	diorite, medium-gray to pale greenish-gray; contains mica, garnet, magnetite	Tertiary igneous intrusion
35.7–39.6	limestone; contains calcite veinlets	San Andres Limestone
39.6–42.7	diorite, light-gray to orangish-gray; contains mica, garnet, and magnetite	Tertiary igneous intrusion
42.7–44.2	limestone	San Andres Limestone
44.2–54.9	diorite	Tertiary igneous intrusion
54.9–61.9	limestone, interbedded with dolomite	San Andres Limestone
61.9–76.2	diorite	Tertiary igneous intrusion
76.2–82.3	limestone	San Andres Limestone
82.3–85.3	diorite	Tertiary igneous intrusion
85.3–87.5	limestone; contains calcite veins	San Andres Limestone
87.5–89.9	shale, very calcareous	
89.9–113.7	limestone, minor amounts of siltstone and gypsum[1]	
113.7–120.4	sandstone, very calcareous, coarse- to very fine-grained	
120.4–141.7	limestone, slightly fossiliferous	
141.7–157.6	sandstone, silty and calcareous	Glorieta Sandstone
157.6–160.9	limestone	
160.9–167.6	sandstone, silty and calcareous	
167.6–167.9	shale, gray	
167.9–194.2	sandstone, very fine- to medium-grained hard, tightly cemented[2]	Yeso Formation

[1]Seep at 97.5 meters.

[2]Water at 190.5 meters.

Appendix 1–3. Lithologic log for test hole 3 (adapted from Clebsch, 1957).

[Legal description: 1S.8E.3.121]

Depth (meters)	Lithology	Formation
0–0.9	sandy soil	Quaternary alluvial sediments
0.9–2.4	gypsum and limestone	San Andres Limestone
2.4–3.7	boulders and gravel	
3.7–4.9	gypsum	
4.9–10.7	boulders	
10.7–18.3	black limestone	
18.3–20.7	white limestone	
20.7–25.9	yellow sand	
25.9–27.4	limestone	
27.4–34.1	gypsum	
34.1-35.7	yellow sand	
35.7-41.1	limestone	
41.1–43.6	quartz	
43.6–44.8	limestone	
44.8–46.3	yellow sand	
46.3–50.3	gypsum	
50.3–54.9	limestone	
54.9–61.9	gypsum	
61.9–65.5	white limestone	
65.5–68.0	sandstone	
68.0–76.2	igneous dike rock	Malpais Basalt
76.2–77.7	broken sand	San Andres Limestone
77.7–82.3	gypsum	
82.3–84.4	limestone	
84.4–128	not record	
128–131.1	limestone	Glorieta Sandstone
131.1–138.7	yellow sandstone	
138.7–140.2	red sandstone	Yeso Formation
140.2–147.8	yellow sandstone	
147.8–150.9	sharp sandy limestone	
150.9–176.8	hard yellow sandstone	
176.8–182.9	soft white sandstone	
182.9–214	yellow sandstone	
214–235	red sandstone	
235–240.5	red clay	
240.5–241.7	limestone	
241.7–242.3	red clay	
242.3–243.8	limestone	
243.8–246.6	white limestone	
246.6–247.2	red clay	
247.2–256	white limestone	
256–266.7	black limestone[1]	

[1]Water at 256.0 meters.